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ABSTRACT

This study was motivated by the fact that Native Americans have the smallest percentage of secondary and postsecondary students performing at the advanced level in mathematics of all ethnic groups. The study sought to determine whether teaching methods employed in Cognitively Guided Instruction (CGI), an approach that provides teachers with research-based knowledge about primary mathematics in relation to children's thinking, were compatible with the teaching methods of Native American pedagogy. A literature review outlines five instructional methods common across Native American tribes: indirect rather than direct instruction, problem solving based on sense-making, problem solving that is culturally situated and based on the lived experiences of the student, cooperative rather than competitive instruction, and time-generous rather than time-driven problem solving. Determination of whether Native American pedagogy and CGI were compatible was dependent upon one teacher's knowledge of both approaches. After participating in two 30-hour CGI workshops, an Oneida kindergarten teacher implemented the approach in her classroom. After reflecting on how Oneida cultural values influenced her teaching and how her teaching corresponded with Native American methods, this teacher identified the commonalities between Oneida/Native American pedagogy and CGI as she understood them. On a nine-item test, the Oneida kindergartners demonstrated a remarkable mathematical problem-solving ability, indicating that CGI is a culturally compatible way of teaching mathematics to Native American children. Appendices present CGI problem types and solution strategies, research documents, analysis of Oneida cultural values, and analysis of teacher interviews and children's solution strategies. (Contains 103 references.) (TD)

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